



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,428	02/22/2002	Takashi Hiroi	501.41125CX1	7409
20457	7590	05/18/2005	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			FERNANDEZ, KALIMAH	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/079,428

Applicant(s)

HIROI ET AL.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-19,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-19,21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2,4-9,11-19, and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 6,097,887 issued to Hardikar et al.
3. Hardikar et al disclose an inspection means having a sensor to detect an image of a pattern formed on a specimen to be inspected and a processor to process the detected image to extract a defect candidate of the pattern with its location information (see for example col.1, lines 15-21; col.8, lines 4-15).
4. Hardikar et al disclose an output means for outputting an image of the extracted defect candidate and data including location information of the defect candidate (see for example col.5, lines 6-22; col.6, lines 29-36).
5. Hardikar et al disclose an information transfer means (see for example col.2, lines 51-65; col.3, lines 29-46).

6. Hardikar et al disclose a store means (see for example col.4, lines 42-46).
7. Hardikar et al disclose a processing means having a display screen (see for example col.7, lines 9-22).
8. Hardikar et al disclose the processing means simultaneously displays defect candidate distribution data in a wafer map format and an enlarged image of a defect candidate on the display screen (see col.6, lines 8-28).
9. As per claims 2 and 4, Hardikar et al disclose the processing means displays defect candidate location data on the display screen in a map format (col.6, lines 8-10).
10. As per claims 5-7 and 19, Hardikar et al disclose classifying a defect and displaying the classified defect in map format on the display screen (see for example col.8, lines 15-61).
11. As per claim 8, Hardikar et al disclose all the limitations as discussed above.
12. As per claim 9, Hardikar et al disclose an image-detecting unit detects optical image of pattern (col.8, lines 4-7).
13. As per claims 11-12 and 15, Hardikar et al disclose extracting the defect candidate image and its location information from the detected

images (col.6, lines 35-36). Hardikar et al also disclose the detected images by comparing the detected images with reference images (col.6, lines 18-25).

14. As per claim 13, Hardikar et al disclose the outputting unit and the data-storing unit are connected by a network (col.7, lines 36-45).

15. As per claims 14-15, Hardikar et al disclose a processing unit detects defects among the stored defect candidates and the display unit displays an image of the extracted defect on the display screen in map format (col.6, lines 1-6).

16. As per claims 16-17, Hardikar et al disclose the processing unit detects defects among the stored defect candidates by using a variable threshold value (col.7, lines 49-63).

17. As per claim 18, Hardikar et al disclose all of limitations as discussed above.

18. As per claim 21, Hardikar et al disclose the map indicates distribution of the defect classified in the same category with the displayed defect image by the defect candidate data processing unit (see col.6, lines 8-15).

19. As per claim 22, Hardikar et al disclose the display unit displays an image of defect, which is pointed out on the map displayed on the display screen (col.6, lines 10-15).

***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hardikar et al ('887) as applied to claim 8 above, and further in view of US Pat No 5,761,064 issued to La et al.

22. Hardikar et al teach the claimed invention except for an image-detecting unit detects secondary electron image of the pattern.

23. However, La et al teach the desirability of correlating optical imaging and secondary electron imaging (see for example col.2, lines 18-26; col.3, lines 37-41).

24. It would have been obvious to an ordinary artisan to combine Hardikar et al and La et al, because La et al teach full automation between multiple defect instruments.

### ***Conclusion***

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 571-272-2470. The examiner can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KF

  
JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800